IN BRIEF

GENE EXPRESSION

Mammalian sperm translate nuclear-encoded proteins by mitochondrial-type ribosomes.

Gur, Y. & Breitbart, H. *Genes Dev.* 31 January 2006 (doi:10.1101/gad.367606)

Sperm have traditionally been thought to be transcriptionally and translationally silent, but this work shows for the first time that proteins are made in the mature sperm of humans, cows, rats and mice and are required for sperm function. Labelled amino acids were incorporated into protein *in vivo* during sperm capacitation; blocking translation impaired the motility of sperm and its fertilization rate *in vitro*.

COMPLEX TRAITS

The sex-specific genetic architecture of quantitative traits in humans.

Weiss, L. A. *et al. Nature Genet.* **38**, 218–222 (2006)

Quantitative traits might differ in their expression depending on the sex of the bearer, and indeed sex-specific effects on complex traits have been reported in several model species. The authors show that the same is true in humans: 11 of the 17 quantitative traits that were examined in a human population act differently in males compared with females. It is therefore advisable to incorporate this effect into future mapping strategies for complex-trait genes.

GENE EXPRESSION

The undertranslated transcriptome reveals widespread translational silencing by alternative 5′ transcript leaders.

Law, G. L. *et al. Genome Biol.* **6**, R111 (2006)

This study indicates that alterations in translational efficiency are important in regulating gene expression in response to environmental stress. The ~8% of *Saccharomyces cerevisiae* mRNAs that are translated inefficiently were shown to be enriched for functions in stress responses. Transcripts that were analysed further showed increased translation when a relevant stress stimulus was applied. Two-thirds of these mRNAs underwent alterations in their 5′ regions in response to stress, indicating that translational efficiency is controlled through transcript structure.

EVOLUTION

Evolution of a polyphenism by genetic accommodation.

Suzuki, Y. & Nijhout, H. F. *Science* **311**, 650–652 (2006)

Polyphenisms — in which organisms show distinct phenotypes in different environments — are common in nature, but their genetic basis is poorly understood. Tobacco hornworm larvae are usually green, but a mutation in a hormone-encoding gene results in black coloration. However, when exposed to heat shock, mutant larvae showed a range of colours between black and green. From these, polyphenic strains could be selected in which larvae were consistently black or green, depending on the temperature. This suggests an interplay between existing quantitative variation, sensitizing mutations and environmental factors in the evolution of polyphenism.